

REMARKS/ARGUMENTS

Claims 7-16 are pending in this application. By this amendment, Applicant amends Claim 7.

Applicant's counsel greatly appreciates the courtesies extended by the Examiner in personal interview of September 16, 2009. In the personal interview, Applicant's counsel explained the features of the present invention, and how the present invention differs from the invention of Reiff et al. (US 5,173,220) and O'Connor et al. (U.S. 5,705,117).

Claims 7-16 were rejected under 35 U.S.C. § 112, first paragraph, for allegedly not complying with the written description requirement. Particularly, the Examiner alleged, "In claim 7, last two lines, the newly-added limitation of 'heights of the inorganic members inserted into the concave portions are substantially the same as a height of the cured resin material remaining in the cavities' is not supported by the originally-filed specification and thus, constitutes new matter (the portion of the specification cited by applicant, namely pages 14 and 15 (or paragraphs [0058] - [0063] of the published application) and Figures 4B and 4C, do not describe the height of any feature, including inorganic members or cured resin material)."

Although Applicant respectfully disagrees with the Examiner's allegations, to expedite prosecution of the present application, Applicant has amended Claim 7 to remove the recitation of "heights of the inorganic members inserted into the concave portions are substantially the same as a height of the cured resin material remaining in the cavities." Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 7-11 and 13-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Reiff et al. Claims 7-11 and 13-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over O'Connor et al. Claim 12 was rejected under 35 U.S.C. § 103(a) as being unpatentable over either or Reiff et al. or O'Connor et al., and further in view of Takeshi (JP 2001-237616). Applicant respectfully traverses the

rejections of Claims 7-16.

Claim 7 has been amended to recite:

A method for manufacturing a three-dimensional photonic structure comprising a plurality of inorganic members composed of an inorganic material and a resin matrix within which the plurality of inorganic members are disposed, the resin matrix being composed of a photo-cured resin material, the method comprising the steps of:

preparing the plurality of inorganic members and a photocurable resin material;

successively and repeatedly performing a stereolithographic step for curing stacked layers composed of the photocurable resin material along a stacking direction to form a three-dimensional component such that cavities are formed at locations to be occupied by the inorganic members in the three-dimensional component having a structure in which the plurality of cured resin layers composed of the photo-cured resin material are stacked;

filling the cavities with the photocurable resin material;
inserting the inorganic members into concave portions of the cavities before closing the cavities during the stereolithographic step, each of the concave portions being at least a portion of the corresponding cavity and having an opening through which each of the inorganic members can pass, each gap between the surface of each of the concave portions and the corresponding inorganic member being filled with the photocurable resin material; and

thermally curing the photocurable resin material remaining in the cavities. (emphasis added)

The Examiner alleged that Reiff et al. teaches all of the features recited in Applicant's Claim 7, except for (1) using a plurality of inorganic members and (2) heights of the inorganic members. The Examiner further alleged, "The use of a plurality of members would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Reiff et al. principally in order to manufacture a three-dimensional product having desired characteristics and/or properties. The heights of the inorganic members would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Reiff et al. principally in order to manufacture a three-dimensional produce having a desired structure."

The Examiner also alleged that O'Connor et al. teaches all of the features recited in Applicant's Claim 7, except for heights of the inorganic member. The Examiner further alleged, "The heights of the inorganic members would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of O'Connor et al. principally in order to manufacture a three-dimensional product having a desired structure."

Applicant's Claim 7 has been amended to recite the step of "filling the cavities with the photocurable resin material." Support for this step is found, for example, in the first full paragraph on page 14 and in Figs. 4A-4C of Applicant's originally filed Substitute Specification.

As acknowledged by the Examiner on the Continuation Sheet of the Interview Summary dated September 16, 2009, at best, Reiff et al. and O'Connor et al. merely teach that some residual amount of photocurable resin may remain in cavities due to the nature of the stereolithographic process, and neither Reiff et al. nor O'Connor et al. teaches or suggest any step of filling cavities. Thus, Reiff et al. and O'Connor et al. certainly fail to teach or suggest the steps of "filling the cavities with the photocurable resin material" and "inserting the inorganic members into concave portions of the cavities before closing the cavities during the stereolithographic step" as recited in Applicant's Claim 7.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of Claim 7 under 35 U.S.C. § 102(b) as being anticipated by Reiff et al., and the rejection of Claim 7 under 35 U.S.C. § 103(a) as being unpatentable over O'Connor et al.

The Examiner relied upon Takeshi to allegedly cure deficiencies of Reiff et al. and O'Connor et al.. However, Takeshi fails to teach or suggest the steps of "filling the cavities with the photocurable resin material" and "inserting the inorganic members into concave portions of the cavities before closing the cavities during the stereolithographic step" as recited in Applicant's Claim 7. Thus, Applicant respectfully submits that Takeshi fails to cure the deficiencies of Reiff et al. and O'Connor et al. described above.

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Accordingly, Applicant respectfully submits that Reiff et al., O'Connor et al., and Takeshi, applied alone or in combination, fail to teach or suggest the unique combination and arrangement of features recited in Applicant's Claim 7.

In view of the foregoing amendments and remarks, Applicant respectfully submits that Claim 7 is allowable. Claims 8-16 depend upon Claim 7, and are therefore allowable for at least the reasons that Claim 7 is allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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